

Remarks

Further and favorable reconsideration is respectfully requested in view of the foregoing amendments and following remarks.

Thus, in response to the objection to claim 10, this claim has been amended as suggested by the Examiner, rendering the objection moot.

Claims 7 and 8 have been amended to depend from claim 6 instead of claim 4, since claim 6 rather than claim 4 refers to the crosslinking embodiment of the invention.

New claim 11 has been added to the application, and sets a lower limit of 1.8 dl/g for the inherent viscosity of the vinylidene fluoride copolymer. This lower limit is based on Polymer Preparation Examples 2 and 3 on pages 20 and 21 of the specification.

The patentability of the present invention over the disclosures of the references relied upon by the Examiner in rejecting the claims will be apparent upon consideration of the following remarks.

Thus, the rejection of claims 1 and 3-10 under 35 U.S.C. §102(b) or 35 U.S.C. §103(a) based on Gozdz et al. is respectfully traversed.

This reference is discussed on page 4 of Applicants' response filed April 30, 2002, and as indicated therein, together with the subsequent discussion (beginning at line 2 from the bottom on page 4 of the same response) of Table I and Figs. A-C attached to the response, Gozdz et al. fails to disclose or suggest a vinylidene fluoride copolymer having an inherent viscosity of 1.7 to 7 dl/g.

In more detail, as shown by previously submitted Table I, Kynar Flex 2822 used in Example 1 of Gozdz et al. exhibited $\eta_{inh} = 1.103$ dl/g, and $M_w = 32.2 \times 10^4$. Furthermore, the Kynar series P(VDF/HFP) copolymers show somewhat higher molecular weights than expected from their η_{inh} values based on a relationship obtained with the copolymers of the present invention, as shown in previously submitted Fig. C and Table I.

In addition, considering previously submitted Figs. A and B, it is apparent that identical copolymers will show higher intrinsic viscosity $[\eta]$ values than inherent viscosity $[\eta_{inh}]$ values. The Gozdz et al. reference discloses that the vinylidene fluoride copolymers have intrinsic viscosity $[\eta]$ levels of 1.10-1.60 dl/g (column 5, lines 50-52), which would correlate to substantially lower inherent viscosity $[\eta_{inh}]$ values. For instance, using the relationship between inherent viscosity and intrinsic

viscosity in previously submitted Fig. B, it is apparent that the upper limit of 1.6 dl/g for intrinsic viscosity in Gozdz et al. would be the same as an inherent viscosity value of about 1.4 dl/g, which is well below the lower limit of 1.7 dl/g for the inherent viscosity in claim 1 of the present application.

The Examiner takes the position that since Gozdz et al. discloses a molecular weight range of from about 100×10^3 to about 500×10^3 for the vinylidene fluoride/hexafluoropropylene copolymer, and since Applicants have stated that the claimed inherent viscosity of greater than or equal to 1.7 dl/g roughly corresponds to $M_w \geq 500,000$, a vinylidene fluoride/hexafluoropropylene copolymer having a molecular weight of about 500×10^3 inherently has a viscosity of about 1.7 dl/g.

However, Applicants' statement must be taken in context, and as noted on page 5 of the response filed April 30, 2002, Table I suggests that the claimed inherent viscosity level of ≥ 1.7 dl/g roughly corresponds to $M_w \geq 50 \times 10^4$. Table I discloses that Sample FD-2390 has an inherent viscosity of 1.790 dl/g and a M_w of 52.6×10^4 ; and that Sample FD-2425 has an inherent viscosity of 1.240 dl/g and a M_w of 32.4×10^4 . Table I does not show that a M_w of 50×10^4 is the same as an inherent viscosity of 1.70 dl/g. The context in which Applicants made their statement is that the Kynar-series copolymers (2801, 2822 and 2850) used in the references all exhibited M_w values substantially lower than 50×10^4 . So it can be said with certainty that these particular Kynar-series copolymers do not have an inherent viscosity even close to that which is presently claimed. It cannot be said with certainty that a M_w of 50×10^4 corresponds to an inherent viscosity of 1.70 dl/g, and Applicants have certainly not admitted this to be the case. The present claims are couched in terms of inherent viscosity, not in terms of molecular weight. The question thus becomes whether or not Gozdz et al. discloses or suggests vinylidene fluoride copolymers with an inherent viscosity of 1.7 dl/g or greater. Considering the foregoing comments, Applicants respectfully submit that the reference does not include such a disclosure or suggestion.

Attention is also directed to new claim 11, which recites an inherent viscosity of 1.8 to 7 dl/g for the vinylidene fluoride copolymer. This range is even further removed from Gozdz et al., and for this additional reason, is considered to be clearly patentable over the reference.

For these reasons, Applicants take the position that the presently claimed invention is neither anticipated nor suggested by Gozdz et al.

In regard to the issue of obviousness over this reference, Applicants again note that the significance of using a vinylidene fluoride copolymer having an inherent viscosity within the presently claimed range is shown from the Examples and Comparative Examples set forth in the present specification.

The rejection of claims 1 and 3-10 under 35 U.S.C. §102(b) or 35 U.S.C. §103(a) based on WO 97/18596 is respectfully traversed.


The Examiner criticizes Mr. Teramoto's previously submitted Declaration as being insufficient to show that the P(VDF/HFP) copolymers in USP 6,284,412 (relied upon by the Examiner as a translation of WO '596) have an inherent viscosity η_{inh} substantially lower than set forth in claim 1 of the present application. In response to the criticism, please see the attached Supplemental Declaration of Mr. Teramoto, including a discussion based on measured MFR (melt flow rate) values of PVDF homopolymers and P(VDF/HFP) copolymers having various η_{inh} values. In view of this Supplemental Declaration, Applicants respectfully submit that they have overcome the Examiner's statement at the bottom of page 3 of the Office Action that the disclosure of a η_{inh} range of 0.0029 dl/g to 28.7 dl/g (corresponding to a molecular weight range of 1,000 to 10,000,000) anticipates the claimed range of 1.7 to 7 dl/g.

Also in this regard, Applicants point out that the fact that a reference may encompass a claimed invention does not necessarily mean that the reference describes or suggests the invention. *In re Benno*, 226 USPQ 683. Furthermore, even if such a broad range in the references raises a presumption of obviousness, such presumption is overcome by the showing of unexpected superior results achieved in accordance with the present invention, as set forth by the comparative data in the specification as referred to above, establishing the criticality of the claimed inherent viscosity.

Therefore, in view of the foregoing amendments and remarks, it is submitted that each of the grounds of objection and rejection set forth by the Examiner has been overcome, and that the application is in condition for allowance. Such allowance is solicited.

Respectfully submitted,

Takumi KATSURAO et al.

By: 
Michael R. Davis
Registration No. 25,134
Attorney for Applicants

MRD/pth
Washington, D.C. 20006-1021
Telephone (202) 721-8200
Facsimile (202) 721-8250
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